Key Findings:

- Emergency dispatch services in Sangamon County are provided through the combined E911 Centralized Dispatch Center/System.

- This center and the associated personnel are overseen by two administrative boards.

- The Emergency Telephone Systems Department (ETSD) oversees the facility and equipment needs associated with the dispatch system. It is overseen by a board and funded through telephone service charges.

- The SCCDS, under supervision of its board, is responsible for emergency dispatch personnel and related functions. It is funded on a shared basis by the ETSD and the City of Springfield and Sangamon County, the two largest users.

- The CEC reviewed these agencies and proposes some areas for review related to ETSD protocols and local potential to collect and utilize performance measurement data.

- In light of its research, the CEC recommends that local emergency responders and the E911 Dispatch System evaluate existing protocols for data collection and work to develop mechanisms for performance measurement and reporting.

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Citizens' Efficiency Commission Research Report: Emergency 911 System Data Collection

Introduction

This report represents a formal recommendation by the Citizens' Efficiency Commission (CEC). Members of the CEC and its research staff have validated information contained in this report. The Commission expresses its hope that relevant local leaders will review the recommendation and take strides toward its implementation.

In light of the research presented below, the CEC recommends that local emergency responders and the E911 Dispatch System evaluate existing protocols for data collection and work to develop mechanisms for performance measurement and reporting.

The Commission is prepared to provide assistance to the greatest extent possible for the review and implementation of these recommendations. The CEC may be interested in further efficiency considerations that develop based on this advisory report.

Background Information

The Citizens' Efficiency Commission for Sangamon County (CEC) was established by referendum in 2010 and tasked with finding ways that local governments can function more efficiently and effectively. This broad mission has allowed Commissioners opportunity to acquire educational resources related to the structure and functions of local governments in Sangamon County, about which many Sangamon County citizens may not be fully informed.

More significantly, in the course of its work, the group has found on numerous occasions that its task could be made easier or its work product improved by the existence of more readily-available assessment data among local government jurisdictions.

Many local governments in Sangamon County do not make a concerted effort to measure or improve their performance through a data-driven approach. More often than not, however, local governments have historically chosen not to collect performance data because they had no impetus to do so, rather than due to fault or incompetence. In the event that no one has requested or required the data, local governments often do not perceive data collection as central to their core missions, particularly in light of current resource scarcity.

In 2013, the CEC approved a finding and recommendation related to Centralized Dispatch Systems that advised that Auburn and Chatham's independent dispatch centers be combined into the

centralized system.[1] While developing this recommendation, the Public Safety Committee of the CEC noted some aspects of E911 protocol that may benefit from further review, particularly as related to performance data collection. Although the committee did not feel any of these considerations rose to the level of a CEC recommendation, they are noted in this informational brief. Considering the suggested improvements in performance data collection may assist the Dispatch Center in achieving its mission and collaboratively supporting the efforts of local emergency responders in the region as effectively as possible.

Administrative Overview and Existing Operations[2]

In 1983, the individual dispatch centers for the Springfield Police Department, Springfield Fire Department, and Sangamon County Sheriff's Office co-located into one center, representing a first step toward cooperation. Although co-located, dispatchers from each agency continued to be employed by their respective agencies. Since that time, the respective departments have been combined and moved to a new combined center.

The Sangamon County Emergency 911 System is now governed and directed by two boards and an executive committee. Although the existence of two boards alongside an executive committee initially led the CEC to question the appearance of redundancy, upon further examination the CEC notes that these two boards exist because of the authorities and funding lines involved in the two agencies, as well as the large number of jurisdictions and entities requiring representation related to dispatch functions.

Sangamon County Emergency Telephone System Department and Board

The first of these boards is the Emergency Telephone System Board (ETSB), which is responsible for governing the Emergency Telephone System Department (ETSD). The Sangamon County Board established the ETSB in 1989 pursuant to Illinois Revised Statutes and a County Board resolution to oversee the coordination among the various co-located departments. In 1995, when the Sangamon County Board created the combined ETSD, the ETSB became responsible as the oversight agency for that institution.

The ETSD is the administrative organization that owns and is responsible for procurement, maintenance and operational efficiency of the facilities and equipment required for an effective public safety emergency communications center. Funding for the ETSD is entirely from revenue generated from a monthly 9-1-1 surcharge on landline and cellular telephones of Sangamon County businesses and residences, including telephones of all government entities located in Sangamon County (based on zip codes). The ETSD funds the functions of the centralized dispatch center with the exception of personnel. The ETSD also maintains an emergency backup communications center equipped with all necessary equipment under the County Building's Sheriff Department annex.

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[1] Citizens' Efficiency Commission (June 12, 2013) "Public Safety Emergency Telecommunications." Available at: http://www.co.sangamon.il.us/Departments/RegionalPlanning/documents/CEC/ Centralized%20Dispatch%20Recommendation.pdf.

[2] Unless otherwise noted, information in this brief was derived from www.sangamoncounty911.org; or CEC interviews with Dave Dodson, Executive Director, ETSD (April 4, 2012), or Kenneth Davis, Deputy Director, ETSD (June 21, 2013).

The ETSB, which oversees the ETSD, is composed of seven (7) members appointed to four-year terms by the Sangamon County Board. Every attempt is made to ensure the Board includes at least one civilian and one member each representing the City of Springfield, Sangamon County, rural fire departments and rural police departments. The Board meets monthly.

Duties of the ETSD and its board include:
- Planning, coordinating, supervising, procuring, upgrading, and maintaining functions related to the safety and reliability of the 911 system,
- Assigning addresses and maintaining the Master Street Address Guide (MSAG) as well as maps identifying all police, fire and EMS boundaries,
- Updating and maintaining all specialized equipment for the receipt and delivery of 9-1-1 calls (communications equipment, personal computers, communications software and Mobile Data Computers (MDCs) found in many county emergency vehicles,
- Public education and awareness,
- Receiving revenues from the imposed surcharge and other sources for deposit into the Emergency Telephone System Fund,
- Paying bills and disbursing monies as authorized by law, and
- Hiring staff for the ETSD, functioning under general policies established by the ETSD, and conducting an annual audit.

The ETSD is staffed by ten positions, including an Executive Director and Deputy Director; an Office Manager and Office Assistant; System Administrator, System & Security Analyst and Mapping Software Technician; Procedures & Education Analyst; Field Address Researcher and Field Address Assistant.

Sangamon County Central Dispatch System (SCCDS)

The Sangamon County Central Dispatch System (SCCDS) is a public agency voluntarily established pursuant to Illinois state law. It was created in 1997 with the merger of the previously independent city and county communication departments. As the *operational* backbone of the County's public safety communications, it is the 24-hour, emergency 9-1-1 point of contact for citizens and visitors to all 16 county fire/EMS departments, 3 private ambulance companies, and all of the 22 police departments.

Funding for the SCCDS is divided amongst the three governing entities. ETSD provides 10% of the center's funding, and the City and County split the remainder through a cost-sharing formula based on population and calls for service, which usually results in proportions of about 65% and 35%, respectively.

The SCCDS is organizationally a separate entity from the ETSD and is governed by an independent Board of Directors. The Board of Directors includes the Mayor of the City of Springfield, the Chairman of the Sangamon County Board and the Chairman of the Emergency Telephone System Board (ETSB). The chairman is elected from among the three board members and serves for a period of one year. This body meets four times annually without compensation. It has general duties of determining general policy of SCCDS, including personnel policies, conducting audits and handling banking, authorization, and payment of funds.

The SCCDS Executive Committee is a 6-member group that is responsible for the operations of the SCCDS, subject to policy directions and limitations established by the

Board of Directors. This committee includes the Sangamon County Sheriff, the City of Springfield Police Chief, the City of Springfield Fire Chief, the Coordinator of the Office of Emergency Management, and one each appointed by the Chairman of the Sangamon County Board and the Mayor of Springfield. Members of this committee serve without compensation from SCCDS. This committee meets monthly.

Duties of the SCCDS Executive Committee include:
- Overseeing the operating affairs of SCCDS, including the review of administrative decisions concerning personnel, operation procedures, expenditures and the utilization of personnel.
- Recommending action to the Board of Directors concerning personnel, operating and personnel policies, expenditures and the utilization of personnel.
- Submitting a proposed budget for the upcoming year to the Board of Directors no later than November 30 of each year.
- Approving expenditures up to $10,000 pursuant to the budget approved by the Board of Directors. Expenditures in excess of $10,000 require the approval of the Board of Directors.
- Investigating all complaints concerning the administration and operation of SCCDS and recommending action to the Board of Directors.

Ten percent of the operational cost of the SCCDS (personnel) is provided by the ETSD from the 9-1-1 surcharge revenue. The remaining 90 percent is provided by the City of Springfield and Sangamon County on a proportional cost sharing formula based on population and calls for service. This generally results in a split of 65% and 35% respectively between the two governments.

Normal staffing of the SCCDS includes eight dispatchers and a supervisor. Even though all dispatchers are trained to take any type of call, typically three will take the city police calls, three will take the fire and ambulance calls and two will be assigned to take calls from the sheriff's office and rural police agencies. The center averages about 21,000 calls per month.

Public Safety Protocols and Performance Measurement Data

As discussed above, ETSD/SCCDS functions initially came under the CEC's review as a result of investigations into other public safety functions that required data collection. Accordingly, the CEC explored at length the availability of performance measurement data in this system to ensure that appropriate measures could be developed to improve public safety services in the region as part of the CEC's broader effort related to on-going and sustainable efficiency and effectiveness measures.

The ETSD utilizes computer aided dispatch (CAD) software provided by New World Systems. This software is integrated with GPS mapping, mobile computing and records management. Its features include automatic address verification, real-time GPS unit location and generating of operations reports. It can greatly enhance the communications and response coordination capabilities between and among the dispatchers and the emergency responders. Through this CAD system, ETSD is also capable of producing and sharing reports that can assist the public safety agencies in measuring performance.

MDC Agencies

To gain the greatest benefits from the CAD software system, emergency response agencies must have Mobile Data Computers (MDCs). In Sangamon County, only twenty-six agencies, other than ambulance companies, have the MDCs. These twenty-six agencies include larger law enforcement groups in the county, as well as the City of Springfield and Chatham FPD's fire/EMS departments. Ambulance agencies are required to have Mobile Data Computers (MDCs) in their vehicles, making dispatchers aware of their locations. Private ambulance agencies servicing Sangamon County do not pay fees for dispatch, which is not standard practice in the industry.

The dispatch process is generally governed by established protocols developed by emergency service agencies. These protocols relate to automatic mutual aid pages, appropriate agency and equipment dispatches for emergency incidents, and information dispatchers are required to gather to contribute to first responders' understanding and awareness of the emergency situation. For example, based on the information taken by a dispatcher, the dispatch may be for an ambulance only or may be in combination with a police and/or fire call.

For all incidents, in the course of following these protocol guidelines, dispatchers collected a substantial amount of incident data through both automated CAD processes and manually-entered notations. Because the data from the MDCs is directly entered through the CAD software, ETSD is able to provide, with minimal effort, summary reports involving multiple incidents to the twenty-six agencies that have MDCs. The CEC found these reports to be of significant value in its examination of other public safety issues, including policing and fire/EMS services.

Non-MDC Agencies

A number of agencies do not have MDCs in their vehicles, which changes the data collection on the part of the E911 system. These agencies primarily include smaller fire protection districts, the Federal Park Service, and adult and juvenile probation. Agencies without MDCs are still able to effectively communicate by radio with the SCCDS dispatchers. However, for those agencies without MDCs, communication, especially the recording of call times and other components needed to measure performance, cannot occur as efficiently and effectively as if these agencies were incorporated into the CAD software.

For non-MDC agencies, any data related to an incident is currently found only in the narrative that has been composed by the dispatcher during the course of the incident. Incident reports can be provided to the response agency, but to produce a report involving multiple incidents would require time and manpower to extract the information from the narrative.

The CEC inquired as to opportunities to improve reporting capabilities related to emergency response incidents across time and jurisdictions. The CEC learned that rural FPDs report their call times to the State Fire Marshall for the National Fire Incident Response System (NFIRS) database, often by manually calling dispatchers to learn what their recorded response times were on an incident-by-incident basis.

When the CEC inquired as to what would be necessary to bring all jurisdictions to the same level of data-gathering and technological sophistication, the ETSD noted that costs

for purchase and continual operation of the MDCs are significant and are beyond available budget amounts for many agencies, particularly the rural fire protection districts. The ETSD indicated that this equipment has generally been deemed cost prohibitive by smaller districts,

Alternatives

While the CEC did not identify specific efficiency and effectiveness opportunities related to the SCCDS/ETSD system and its core mission, its increased understanding of these bodies and their functions in providing public safety on a regional basis led it to identify two alternatives for public safety communications in the region: maintaining the status quo or reevaluating data collection and use protocols.

Although the ETSD indicates that it is currently outside of its scope or beyond its mission to capture this data, the CEC finds that it would be of benefit for this information to be captured in a format that could be utilized to generate reports. The CEC believes that the lack of this information in a useable format creates a barrier to program performance review as well as a barrier for identifying areas where service might be improved. This not only limits the public's ability to understand the efforts that the program is making to meet their needs, but it also prevents program managers from identifying areas where improvements can be made and efficiencies obtained. To the extent that the CEC believes that public agencies should manage for results, such management requires the easy availability of data that can be used by the managers of public agencies seeking to make improvements in efficiency and effectiveness.

For example, although the current software set-up only allows times to be recorded in incident notations, the CEC suggests that the ETSD consider reviewing these protocols to allow for increased automated reporting. It further advises that any reviews of the data software set-up and system protocols should be targeted toward improving the ability of local jurisdictions to generate performance data and reports. As the status quo does not allow for many agencies to accurately capture and utilize performance measurement data, a review of the existing system should be considered.

Recommendation

In light of the research presented below, the CEC recommends that local emergency responders and the E911 Dispatch System evaluate existing protocols for data collection and work to develop mechanisms for performance measurement and reporting.

The benefits of implementing the recommendation detailed above include:

- Increased capacity for non-MDC agencies to collect and use dispatch data following restructuring of data collection fields to ensure that call in-service and arrival times are recorded.
- Expanded ability to an established set of performance metrics for local jurisdictions to review for effectiveness on a regular basis.

Steps toward Implementation

Under normal circumstances, the CEC offers steps toward implementation associated with each of its recommendations, in order to assist local jurisdictions in implementing the improvements discussed. In this situation, however, it expects that the professionals

responsible for the ETSD/SCCDS have capacity beyond that of the CEC to develop and implement an appropriate approach to the technical review proposed above.

Although the CEC did not have the capacity to fully develop or discuss all aspects of the ETSD/SCCDS's system and protocol, and found that its efforts may be better spent reviewing efficiency concerns that extend beyond the scope of a single agency, it offers some additional comments on areas with potential for future review related to efficiency and effectiveness. The ETSD/SCCDS could consider working with fire protection and law enforcement agencies to generally review auto call-out or mutual aid protocols to ensure that all established protocols fit the appropriate best practice models for the region's current functional capacity. The ETSD could also consider expansion of dispatch fees for private ambulance service providers or regional geographic assignment of these providers.

As in all of its efforts, the CEC has attempted to identify themes associated with its work. In working with the ETSD/SCCDS, significant themes were readily apparent. The primary theme displayed in this situation, and as suggested above, is that local governments tend not to collect performance data, limiting their ability to manage for results. Many of the public safety entities interacting with the ETSD have never requested the performance data desired by the CEC, which led to some confusion and difficulty in attempting to generate automated reports for both larger and smaller jurisdictions. The CEC encourages a collaborative effort to review these concerns and work toward a system where performance measurement and improvement are a standard part of local government operations, rather than an anomaly.

Respectfully submitted,

Hon. Karen Hasara, Chair
on behalf of the
Citizens' Efficiency Commission
for Sangamon County